

in an amount "effective to stabilize the vinyl halide resin against heat and/or light" can be found throughout the original specification, including, page 5, first paragraph, Example 3, and original claim 1. Support for the "mercapto alkanol ester of a carboxylic acid providing a source of mercaptan exceeding that required to saturate the Sn component of said metal containing stabilizer" can also be found generally throughout the specification, which teaches replacing a portion of the metal containing compound with mercapto alkanol ester of a carboxylic acid. Support for the remaining new claims can be found in canceled claims 200-207 and 237, for example. Accordingly, new matter has not been added.

**II. Rejection Under 35 U.S.C. §112, second paragraph**

The Examiner's rejection of claims 176-183, 219-225, 243, and 244 under 35 U.S.C. §112, second paragraph has been rendered moot by the above amendment.

**III. Double Patenting Rejection**

The Examiner has rejected claims 193-198, 200-207, 209-217, 237-242, 247-264, and 280-323 under the judicially created doctrine of double patenting as being unpatentable over claims 11-16 of U.S. Patent No. 4,412,897 to Kornbaum et al. ("Kornbaum") assigned to AtoChimie. Applicants respectfully disagree and traverse this rejection for at least the following reasons.

As noted by the Examiner, the effective filing date of the pending application antedates the filing date of the Kornbaum patent. When using such a reference in a double patenting rejection, the Examiner may be required to show two-way

obviousness. Under such circumstances, therefore, the Examiner can only support a double patenting rejection if he shows not only that the pending claims would have been obvious over the Kornbaum claims, but that the Kornbaum claims would have been obvious in view of the pending claims. The MPEP outlines the two requirements that must be established before two way obviousness is applicable. See, MPEP 804. According to the MPEP, if (1) applicant could not have filed the claims in a single application; and (2) there was a delay on the part of the Patent Office, then an Examiner relying on a later filed application (or patent), must show two-way obviousness in establishing a double patent rejection. See MPEP 804, citing *In re Berg*, 46 USPQ2d 1226 (Fed. Cir. 1998) ("The two way exception can only apply when the applicant could not avoid separate filings, and even then, only if the PTO controlled the rate of prosecution to cause the later filed species claims to issue before the claims for a genus in an earlier application.")

As shown in more detail below, not only is the two-way obviousness mandated, but the Examiner cannot show that the claimed invention would have been obvious using the two-way obviousness test.

**(1) Applicants Could Not Have Filed the Claims in a Single Application**

Kornbaum is directed to a process of rendering a polymer resistant to ionizing radiation, as well as a sterilized polymer composition made thereby. This patent expressly teaches that when the combination of a stabilizer based on a metallic compound, a thiol, and hydroquinone are incorporated into a polymer, the polymer exhibits unexpected resistance against ionizing radiation. Col. 1, lines 58-65. See also col. 2, lines 20-25 (teaching that "the invention has an unexpected aspect in that it leads

to stabilization against ionizing radiation." Claim 11, and every claim dependent therefrom, specifically recite this combination of elements as leading to a sterilized polymer composition, "containing a stabilizing composition which is effective for preventing discoloration produced by sterilization."

In contrast to the sterilized polymer composition recited in claims 11-16, the pending claims have never been directed to a sterilized composition or an obvious variant thereof. As it was not within the intent of the inventors, the present disclosure does not teach or suggest a process of rendering a polymer resistant to ionizing radiation or a sterilized polymer composition. Accordingly, the present disclosure does not teach the combination of a stabilizer based on a metallic compound, a thiol, and hydroquinone, nor that the incorporation of these elements into a polymer would lead to unexpected resistance to ionization radiation. Because the present application would not support the claims directed to such subject matter, the subject matter of the Kornbaum patent could not have been claimed in the pending application.

**(2) There Has Been an Unreasonable Delay in the Prosecution of the Present Application that Was Not the Fault of Applicants**

As the file history makes clear, the present application has been pending before the U.S. Patent Office for more than 20 years. Due, in part to delays by the U.S. Patent Office, Applicants have been unable to exclude others from exploiting this invention. Such delays include an appeal filed to the Board of Patent Appeals and Interferences on December 13, 1993, but not decided until February 23, 1999, more than five years later. In addition, in September 1982 the Patent Office suspended prosecution to determine if an interference should be filed. It never was.

As the present application would not support the claims f the Kornbaum patent, thus precluding those claims from being claimed in the pending application, and there have been administrative delays by the Patent Office that affected the rate of prosecution, both criteria for requiring a two-way obviousness test have been met.

**(3) Two-Way Obviousness**

When making a two way obviousness determination, the Graham obviousness analysis must be applied twice, once each with the application claims and the patent claims at issue. A double patenting rejection is proper only when each analysis compels a conclusion that the claims at issue is an obvious variation of the invention defined in the claims of the other application/patent. In the present case, the Examiner admits that the conflicting claims are not identical but asserts that they are not patentably distinct because the Kornbaum sterilized composition claims represent a species of the pending generic composition claims. Applicants respectfully disagree.

The method of making a sterilized composition, as well as the composition claimed in the Kornbaum, are fundamentally different than the compositions and methods claimed. As shown, Kornbaum teaches that the combination of a stabilizer based on a metallic compound, a thiol, and hydroquinone, when incorporated into a polymer, leads to the polymer having unexpected properties, namely one having resistance to ionization radiation. The pending claims clearly do not teach or suggest the combination of a stabilizer based on a metallic compound, a thiol, and hydroquinone. In order to establish a prima facie case of obviousness, it is axiomatic that a reference teach or suggest all the claim limitations. See M.P.E.P. § 2143.

Because the pending specification, and certainly the pending claims, do not mention a

sterilized polymer composition, let alone that the combination of a stabilizer based on a metallic compound, a thiol, and hydroquinone, the pending claims do not teach or suggest all the limitations of Kornbaum's claims. As the analysis of the claims of Kornbaum compels a conclusion that such claims are not an obvious variation of the invention defined in the pending claims, no obvious double patenting rejection can be made. For this reason alone, the double patenting rejection is improper and should be withdrawn.

In addition, the analysis of the pending claims also shows that such claims are not an obvious variation of the Kornbaum claims. The claims recite a metal containing stabilizer corresponding to formula (I) or formula (II) and a mercapto alkanol ester of a carboxylic acid providing a source of mercaptan exceeding that required to saturate the Sn component of the metal containing stabilizer, wherein the metal containing stabilizer and the mercapto alkanol ester are present in an amount effective to stabilize a vinyl halide resin against heat and/or light. Claims 11-16 of the Kornbaum patent do not teach or suggest the claims. For example, these claims do not recite or remotely suggest:

- (1) Sn as being bonded to a sulfur atom, as recited in both formulas (I) and (II);
- (2) the amount of components claimed, e.g., wherein the metal containing stabilizer and the mercapto alkanol ester are present in an amount effective to stabilize a vinyl halide resin against heat and/or light; and
- (3) a composition having an excess amount of mercaptan contained therein.

As the analysis of the pending claims compels a conclusion that these claims are

not an obvious variation of the invention defined in the Kornbaum claims, no obvious double patenting rejection can be made. For this additional reason, the double patenting rejection is improper and should be withdrawn.

#### IV. Rejections Under 35 U.S.C. §102

The Examiner rejected claims 176-183 and 296-323 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,021,407 to Gough ("Gough") or U.S. Patent No. 4,062,881 to Kugele ("Kugele"). The Examiner asserts that Gough discloses an organotin halide borate with an organic thiol, "which is a mercapto alkanol ester." As the prior prosecution focused on the novelty associated with the use of reverse esters in combination with the claimed organotin stabilizers, the Examiner focuses his discussion of Gough on the fact that Gough "explicitly gives the generic formula for alkanol mercapto esters and then goes on to specifically name two of them." Office Action at sentence bridging pages 7-8. The Examiner thus concludes that the requirements for anticipation have been met. Applicants respectfully disagree and traverse this rejection.

As has been made clear by the Federal Circuit many times, anticipation requires that each and every claim limitation be met by a single reference. *Glaxo v. Novopharm, Inc.*, 34 USPQ2d 1565 (Fed.Cir. 1995). Applicants submit that every requirement of the independent claims, and each claim dependent therefrom, is not met. As acknowledged by the Examiner, Gough discloses an organotin halide borate, which is not the same or similar to the metal containing stabilizer represented by formulas (I) or (II). Indeed, formulas (I) and (II) recite particular organotin stabilizers, which do not read

on an organotin halide borate. Gough simply does not teach or recite the claimed metal containing stabilizers.

Furthermore, the claimed metal containing stabilizers of formulas (I) and (II) specifically require a mercaptide ligand. See the (SR)<sub>x</sub> group in formulas (I) and (II). The claims recite, in addition to a separate mercapto alkanol ester of a carboxylic acid (i.e., element (b) of the independent claims), an additional mercaptide ligand as being a part of the metal containing stabilizer. The claims also recite the amount of metal containing stabilizer, which contains a mercaptide ligand, and reverse ester in such a way that defines the excess mercaptan by the function it performs, i.e., "wherein said metal containing stabilizer and said mercapto alkanol ester are present in an amount effective to stabilize a vinyl halide resin against heat and/or light." Applicants have discovered that an excess amount of mercaptan in the claimed composition leads to improved and unexpected properties, namely improved stabilization against heat and/or light. Moreover, the claimed invention recites a composition and method in which the mercaptan is in excess, which is defined in the claims as an amount of mercaptan exceeding that required to saturate the Sn component of said metal containing stabilizer.

As Gough does not disclose or remotely suggest compositions and methods comprising the metal containing stabilizer of formulas (I) or (II), let alone mixed with the mercapto alkanol ester of a carboxylic acid in the claimed amounts, there can be no anticipation. For this reason, the anticipation rejection over Gough is improper and Applicants respectfully request that it be withdrawn.

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Applicants respectfully traverse the rejection of Kugele for substantially the same reasons. Kugele does not disclose the stabilizer of formulas (I) or (II) mixed with the mercapto alkanol ester of a carboxylic acid in the claimed amounts. The teachings relied on by the Examiner support this position. As recognized by the Examiner, Examples 1-9 of Kugele merely "depict products of mixing organotin compounds containing a tin-chloride bond such as alkyltin chlorides with mercapto alkanol esters." Office Action at 8. What these examples do not teach or suggest, however, are compositions containing a (1) metal containing stabilizer, which contains a mercaptide ligand, and (2) a mercapto alkanol ester of a carboxylic acid providing a source of mercaptan exceeding that required to saturate the Sn component of the metal containing stabilizer. It is not apparent that any of the fifty-six (56) examples disclosed in Kugele disclose these aspects of the claimed invention.

As stated, not only does anticipation require that each and every claim limitation be met by a single reference (*Glaxo*, 34 USPQ2d at 1565), but such a reference must clearly and unequivocally disclose the claimed composition to one of ordinary skill in the art "without any need for picking, choosing and combining various disclosures." *In re Arkley*, 455 F.2d 586, 587, 172 U.S.P.Q. 524, 526 (C.P.P.A. 1972). In the present case, while Kugele exemplifies 56 compounds, it more broadly teaches sulfide containing tin stabilizers comprising many more possible compounds. See cols. 11-23. Despite Kugele's lengthy disclosure, it is not apparent that the general teachings or the specific examples of Kugele suggest the use of an excess amount of mercaptan, let alone the benefits associated with an excess amount of mercaptan, particularly stabilization to heat and light. In order for one of ordinary skill in the art to attempt to arrive at the



presently claimed invention as asserted by the Examiner, the skilled artisan would need not only to "pick and choose" (a) a metal containing stabilizer within formulas (I) or (II) and (b) a mercapto alkanol ester of a carboxylic acid providing a source of mercaptan exceeding that required to saturate the Sn component of the metal containing stabilizer, but to use these components in an amount effective to stabilize a vinyl halide resin against heat and/or light.

Applicants submit that Kugele does not describe the claimed invention in such a way to have placed it in possession of the public, which contravene the requirements of anticipation. Rather, it is well-settled that a reference must "sufficiently describe the claimed invention to have placed the public in possession of it," or the reference cannot properly anticipate the invention. *Minnesota Mining & Mfg. v. Johnson & Johnson Orthopaedics, Inc.*, 976 F.2d 1559, 1572, 24 U.S.P.Q. 2d 1321 (Fed. Cir. 1992). Kugele does not meet this standard because it does not teach or suggest (a) a metal containing stabilizer within formulas (I) or (II) and (b) a mercapto alkanol ester of a carboxylic acid providing a source of mercaptan exceeding that required to saturate the Sn component of the metal containing stabilizer, in an amount effective to stabilize a vinyl halide resin against heat and/or light. For at least these reasons, the anticipation rejection over Kugele is improper and Applicants respectfully request that it be withdrawn.

**V. Rejection Under 35 U.S.C. §102/103**

The Examiner has rejected claims 176-183, 193-198, 200-207, 209-217, 219-225, 227-233, and 237-323 under 35 U.S.C. §102(b) as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over U.S. Patent No. 3,931,263 to Molt

("Molt"). The Examiner asserts that Molt discloses "organotin stabilizers for polyvinyl chloride that are obtained as a product of mixing organotin compounds containing a tin-sulfur or tin-halogen bond and a mercapto alkanol ester." Office Action at 9. The Examiner relies on the reactions depicted at col. 13, and has annotated Example 7 to show "the specific reaction he has in mind," that apparently "exemplifies a specific mercapto alkanol ester admixed with an organotin compound containing both a tin-sulfur and a tin-halogen bond." Office Action at 9-10. In view of this disclosure, the Examiner concludes that, "it is only proper to hold that this reference anticipates the present claims." Office Action at 10.

In the alternative, the Examiner asserts that while Molt does not teach every embodiment of the mercapto alkanol esters in the claims, "it would have been obvious to one of ordinary skill in the art that any mercapto alkanol ester would really have sufficed for Molt's purposes as long as it could be mixed with an organotin compound containing a tin-sulfur or tin-halogen bond depicted e.g., at col. 13 of the reference patent." Office Action at paragraph bridging 10-11. Applicants respectfully disagree with the Examiner's assertions of anticipation and obviousness, and traverse this rejection.

The claimed invention is not merely directed to an organotin compound containing a tin-sulfur or tin-halogen bond, as asserted by the Examiner. Rather, the invention is directed to a composition and method comprising a metal containing stabilizer corresponding to formula (I) or formula (II), both of which contain a mercaptide ligand, in addition to a Sn-S bond. Molt simply does not teach or suggest a composition comprising a metal containing stabilizer in combination with a mercapto alkanol ester in

such an amount that the composition has an excess amount of mercaptan. Contrary to the Examiner's assertion, therefore, whether any mercapto alkanol ester would suffice in Molt's composition, as long as it could be mixed with an organotin compound as depicted at col. 13 is not relevant. In other words, the substitution of one mercapto alkanol ester for another would not remedy the underlying deficiencies in this reference. For at least these reasons, the anticipation rejection over Molt is improper and Applicants respectfully request that it be withdrawn.

Regarding the obviousness rejection, Applicants submit that there is no motivation in Molt to select the claimed combination of components in the claimed amounts. Obviousness can only be established by modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 U.S.P.Q.2d 1941 (Fed. Cir. 1992). In the present case, Molt only generally describes an organotin mercaptide process, but never suggests the claimed process or resulting compositions. In fact, nothing other than the improper use of Applicants' own disclosure would suggest the selection alleged by the Examiner.

The motivation to modify the prior art must flow from some teaching in the art that suggests the desirability or incentive to make the modification needed to arrive at the claimed invention. *In re Napier*, 55 F.3d 610, 613, 34 U.S.P.Q.2d 1782, 1784 (Fed. Cir. 1995); *In re Gelger*, 815 F.2d 686, 688, 2 U.S.P.Q.2d 1276, 1278 (Fed. Cir. 1987); *In re Laskowski*, 871 F.2d 115, 117, 10 U.S.P.Q.2d 1397, 1399 (Fed. Cir. 1989) ("[t]he mer

fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification") (quoting *In re Gordon*, 733 F.2d 900, 902, 221 U.S.P.Q. 1125, 1127 (Fed. Cir. 1984)).

Furthermore, the Federal Circuit has repeatedly warned that the requisite motivation must come from the prior art, not applicant's specification. *In re Dow Chem. Co.*, 837 F.2d 469, 473, 5 U.S.P.Q.2d 1529, 1531-1532 (Fed. Cir. 1988) ("[t]here must be a reason or suggestion in the art for selecting the procedure used, other than the knowledge learned from the applicant's disclosure."). It is well-known that using an applicant's disclosure as a blueprint to reconstruct the claimed invention from isolated pieces of the prior art contravenes the statutory mandate of section 103 of judging obviousness at the point in time when the invention was made. *See Grain Processing Corp. v. American Maize-Prods. Co.*, 840 F.2d 902, 907, 5 U.S.P.Q.2d 1788, 1792 (Fed. Cir. 1988).

In view of the complete lack of teaching or suggestion in Molt regarding a metal containing stabilizer in combination with a mercapto alkanol ester of a carboxylic acid providing a source of mercaptan exceeding that required to saturate the Sn component of the metal containing stabilizer, one can objectively conclude that the only way for the Examiner to maintain this obviousness rejection would be by improperly reconstructing the claimed invention by using Applicants' disclosure. Because hindsight reconstruction is improper, and for the additional foregoing reasons, the obviousness rejection is also improper. Applicants thus respectfully request withdrawal of the rejections based on Molt.

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**VI. Interview**

In view of the extraordinary circumstances surrounding this application, and in an effort to advance prosecution, Applicants would like to arrange a personal interview with the Examiner before another action is issued. The undersigned will contact the Examiner shortly to request an interview. However, if the Examiner is not contacted before he is ready to act on this application, the Examiner is asked to call the undersigned to arrange an interview.

**VII. Conclusion**

In view of the foregoing remarks and amendments, Applicants respectfully request withdrawal of the outstanding rejections, the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account no. 06-0916.

Respectfully submitted,

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